

LISTING OF THE CLAIMS

1-4. (Cancelled)

5. (Currently amended) An isolated antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal, comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:3 or antibody fragment thereof comprising the amino acid sequence of SEQ ID NO:3, and at least one light chain variable region having the amino acid sequence of SEQ ID NO:5 or antibody fragment thereof comprising the amino acid sequence of SEQ ID NO:5, wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

6. (Withdrawn) An antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal, comprising at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:7 or antibody fragment thereof; wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

7. (Withdrawn) An antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal, comprising at least one light chain variable region having the amino acid sequence of SEQ ID NO:9 or antibody fragment thereof; wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

8. (Withdrawn) An antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO: 7 or antibody fragment thereof; and at least one light chain variable region having the amino acid sequence of SEQ ID NO: 9 or antibody fragment thereof, wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

9-10. (Cancelled)

11. (Currently amended) An isolated antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal, said antibody comprising: the amino acid sequences of at least one heavy chain variable region and at least one light chain variable region ~~selected from the group consisting of~~ SEQ ID NO:11/SEQ ID NO:13, SEQ ID NO:15/SEQ ID NO:17, SEQ ID

NO:49/SEQ ID NO:21, SEQ ID NO:11/SEQ ID NO:23, SEQ ID NO:41/SEQ ID NO:25, SEQ ID NO:41/SEQ ID NO:27, SEQ ID NO:11/SEQ ID NO:29, SEQ ID NO:31/SEQ ID NO:33, SEQ ID NO:35/SEQ ID NO:37, SEQ ID NO:39/SEQ ID NO:41, SEQ ID NO:43/SEQ ID NO:45, SEQ ID NO:47/SEQ ID NO:49, SEQ ID NO:51/SEQ ID NO:53 and SEQ ID NO:55/SEQ ID NO:57 or antibody fragment thereof comprising SEQ ID NO:51 and SEQ ID NO:53, wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

12. (Currently amended) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO: 3 and at least one light chain variable region having the amino acid sequence of SEQ ID NO: 5 or antibody fragment thereof comprising SEQ ID NO:3 and SEQ ID NO:5.

13. (Cancelled)

14. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:7 or antibody fragment thereof.

15. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:9 or antibody fragment thereof.

16. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:11 or antibody fragment thereof.

17. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:13 or antibody fragment thereof.

18. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:15 or antibody fragment thereof.

19. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:17 or antibody fragment thereof.

20. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:19 or antibody fragment thereof.

21. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:21 or antibody fragment thereof.

22. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:23 or antibody fragment thereof.

23. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:25 or antibody fragment thereof.

24. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:27 or antibody fragment thereof.

25. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:29 or antibody fragment thereof.

26. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:31 or antibody fragment thereof.

27. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:33 or antibody fragment thereof.

28. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:35 or antibody fragment thereof.

29. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:37 or antibody fragment thereof.

30. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:39 or antibody fragment thereof.

31. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:41 or antibody fragment thereof.

32. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:43 or antibody fragment thereof.

33. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:45 or antibody fragment thereof.

34. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:47 or antibody fragment thereof.

35. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:49 or antibody fragment thereof.

36. (Currently amended) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable

region having the amino acid sequence of SEQ ID NO:51 and at least one light chain variable region having the amino acid sequence of SEQ ID NO:53 or antibody fragment thereof comprising SEQ ID NO:51 and SEQ ID NO:53.

37. (Cancelled)

38. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one heavy chain variable region having the amino acid sequence of SEQ ID NO:55 or antibody fragment thereof.

39. (Withdrawn) An isolated antibody or antibody fragment thereof capable of binding to a human erythropoietin receptor in a mammal, said antibody comprising: at least one light chain variable region having the amino acid sequence of SEQ ID NO:57 or antibody fragment thereof.

40. (Currently amended) An isolated antibody capable of binding a human erythropoietin receptor in a mammal, said antibody comprising a heavy chain variable region comprising a continuous sequence from CDR1 through CDR3 having the amino acid sequence ~~selected from the group consisting of: SEQ ID NO:58, SEQ ID NO:59, SEQ ID NO:60, and SEQ ID NO:61~~ and a light chain variable region comprising a continuous sequence from CDR1 through CDR3 having the amino acid sequence SEQ ID NO:62 and fragments thereof.

41. (Cancelled)

42. (Withdrawn) A method of activating an endogenous activity of a human erythropoietin receptor in a mammal, the method comprising the step of administering to said mammal a therapeutically effective amount of an antibody or antibody fragment thereof to activate said receptor, wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

43. (Withdrawn) A method of modulating an endogenous activity of a human erythropoietin receptor in a mammal, the method comprising the step of administering to a mammal a therapeutically effective amount of the antibody or antibody fragment of claim 1 to modulate the activity of the receptor.

44. (Withdrawn) A method of treating a mammal suffering aplasia, the method comprising the step of administering to a mammal in need of treatment a therapeutically effective amount of an antibody or

antibody fragment thereof to activate said receptor, wherein said antibody or antibody fragment thereof does not interact with a peptide having an amino acid sequence of SEQ ID NO:1.

45. (Withdrawn) A method of treating a mammal suffering aplasia, the method comprising the step of administering to a mammal in need of treatment a therapeutically effective amount of the antibody or antibody fragment of claim 1 to modulate the activity of the receptor.

46. (Cancelled)

47. (Withdrawn) An isolated and purified polynucleotide sequence selected from the group consisting of: SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, fragments, complements, and degenerate codon equivalents thereof.

48. (Withdrawn) An isolated and purified amino acid sequence selected from the group consisting of: SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:41, SEQ ID NO:43, SEQ ID NO:45, SEQ ID NO:47, SEQ ID NO:49, SEQ ID NO:51, SEQ ID NO:53, SEQ ID NO:55, SEQ ID NO:57, SEQ ID NO:58, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:61, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:66, SEQ ID NO:67, SEQ ID NO:68 and fragments thereof.

49. (Currently amended) An isolated antibody or antibody fragment thereof that activates an endogenous activity of a human erythropoietin receptor in a mammal wherein said antibody is Ab12, wherein Ab12 has ATCC Accession No. PTA-5554 or antibody fragment is a gamma 2 isotype.

50-54. (Cancelled)

55. (Withdrawn) A method of activating an endogenous activity of a human erythropoietin receptor in a mammal, the method comprising the step of administering to a mammal a therapeutically effective amount of the antibody or antibody fragment of claim 49 to activate said receptor.

56. (Withdrawn) A method of modulating an endogenous activity of a human erythropoietin receptor in a mammal, the method comprising the step of administering to a mammal a therapeutically effective amount of the antibody or antibody fragment of claim 49 to modulate the activity of the receptor.

57. (Withdrawn) A method of treating a mammal suffering aplasia, the method comprising the step of administering to a mammal in need of treatment a therapeutically effective amount of the antibody or antibody fragment of claim 49 to activate the receptor.

58. (Withdrawn) A method of treating a mammal suffering aplasia, the method comprising the step of administering to a mammal in need of treatment a therapeutically effective amount of the antibody or antibody fragment of claim 49 to modulate the activity of the receptor.

59. (Withdrawn) A method of treating a mammal suffering anemia, the method comprising the steps of administering to a mammal in need of treatment a therapeutically effective amount of the antibody or antibody fragment of claim 49 to modulate the activity of the receptor.

60. (Original) A pharmaceutical composition comprising a therapeutically effective amount of the antibody or antibody fragment of claim 49 and a pharmaceutically acceptable excipient.

61. (New) The antibody fragment of claim 5, 11, 12, 36, 40 or 49, wherein the fragment is one selected from the group consisting of an Fab fragment, Fab' fragment, F(ab')<sub>2</sub> fragment and Fv fragment.